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Total Number of Pages in This Submission

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Attached four pages of figures, 3 pages of proprietary software code | |
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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Michael Francis Niemi
Signature	<i>Michael Francis Niemi</i>
Date	10/31/2003

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AMENDED PATENT APPLICATION FOR 10/621,013
SCANNING DEVICE WITH SENSORS AND CAMERA
OR TRICORDER.



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BrainStem Programming Code - Figure 1e.

```
#include <aCore.tea>
#include <aGP.tea>
#include <aCompass.tea>

void init()
{
    /* switch to internal heartbeat */
    /* otherwise terminal program will receive heartbeats */
    asm
    {
        pushlb 1
        popbm aPortHBMode
    }
}

void aDump IntDec(int n)
{
    asm
    {
        pushss 4
        fmtsd
        popbm aPortSerialNTX
    }
}

void aDump CharDec(char c)
{
    asm
    {
        pushsb 3
        fmtbd
        popbm aPortSerialNTX
    }
}

void aDump Char(char c)
{
    asm
    {
        pushsb 3
        pushlb 1
        popbm aPortSerialNTX
    }
}

void aDump String(string s)
```

```
{
    asm {
        pushsb 3
next:
        brz      end
        pushsb 1
        pushlb 4
        addb
        pushsbx
        pushlb 1
        popbm    aPortSerialNTX
        decb     1
        goto     next
end:
        popb
    }
}

void main()
{
    int i = 0;
    int x = 0;
    int y = 0;
    int j = 0;

    init();

    /* waits about 9 seconds */
    /* to provide time to close Console and launch terminal */
    aCore Sleep(30000);
    aCore Sleep(30000);
    aCore Sleep(30000);
    while (1)
    {
        x = aGP ReadGP2D02();
        aCore Sleep(10000);
        aDump String("R: ");
        aDump IntDec(x);
        aDump String(" ");

        j = aCompass ReadInt();
        aCore Sleep(10000);
        aDump String(" H: ");
        aDump IntDec(j / (int)10);
        y = j / 10;
        if(y==359) aDump String("-N ~");
        else if(y==0 || y==1) aDump String("-N");
    }
}
```

```
    else if(y>1 && y<89) aDump_String("-NE");
    else if(y>88 && y<92) aDump_String("-E");
    else if(y>91 && y<179) aDump_String("-SE");
    else if(y>178 && y<182) aDump_String("-S");
    else if(y>181 && y<269) aDump_String("-SW");
    else if(y>268 && y<272) aDump_String("-W");
    else if(y>271 && y<359) aDump_String("-NW");
    aDump_String(" ~");
    aDump_Char(13);
    aDump_Char(10);

    aDump_String(" \n");
    aCore_Sleep(2500);
```

```
    }
}
```